

Application No. 10/087,256
Amendment "C" dated October 20, 2005
Reply to Office Action mailed July 8, 2005

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A biodegradable composition comprising:
~~a soft thermoplastic polymer portion comprised of~~ at least one soft synthetic thermoplastic biodegradable polymer, ~~and optionally thermoplastic starch~~, having a glass transition temperature less than about -10° C. and comprising an aliphatic-aromatic copolyester; and
~~a stiff thermoplastic polymer portion comprised of~~ at least one stiff synthetic thermoplastic biodegradable polymer having a glass transition temperature greater than about 10° C., ~~the stiff thermoplastic polymer portion included in an amount greater than about 55% by combined weight of the soft and stiff thermoplastic polymers portions~~,
wherein the at least one stiff synthetic thermoplastic biodegradable polymer comprises at least one member selected from the group consisting of polylactic acid, polyesteramides, polyethylene terephthalates modified by replacing a portion of terephthalate groups with aliphatic diacid ester groups, and terpolymers including units formed from each of glycolide, lactide and ε-caprolactone.
wherein the biodegradable composition is suitable for formation into at least one of sheets or films,
wherein the biodegradable composition optionally includes, in addition to the at least one soft synthetic thermoplastic biodegradable polymer and the at least one stiff synthetic thermoplastic biodegradable polymer, a natural polymer portion consisting essentially of thermoplastic starch that is substantially free of high boiling liquid plasticizers.
2. (Cancelled)
3. (Cancelled)

Application No. 10/087,256
Amendment "C" dated October 20, 2005
Reply to Office Action mailed July 8, 2005

4. (Cancelled)

5. (Currently Amended) A biodegradable composition as defined in claim [[4]] 1, wherein the ~~thermoplastic starch is substantially free of plasticizers~~ stiff biodegradable polymer is included in an amount of at least about 55% by combined weight of the soft and stiff thermoplastic polymers.

6. (Currently Amended) A biodegradable composition as defined in claim [[4]] 1, wherein the thermoplastic starch is included in an amount of less than about 10% by combined weight of the thermoplastic starch and the soft and stiff synthetic biodegradable polymers.

7. (Currently Amended) A biodegradable composition as defined in claim 1, wherein the stiff biodegradable polymer is included in a range of about 70% to about 95% by combined weight of the biodegradable soft and stiff thermoplastic polymers blend.

8. (Original) A biodegradable composition as defined in claim 1, wherein the stiff biodegradable polymer has a glass transition temperature greater than about 15° C.

9. (Original) A biodegradable composition as defined in claim 1, wherein the stiff biodegradable polymer has a glass transition temperature greater than about 25° C.

10. (Original) A biodegradable composition as defined in claim 1, wherein the stiff biodegradable polymer has a glass transition temperature greater than about 35° C.

11. (Original) A biodegradable composition as defined in claim 1, wherein the soft biodegradable polymer has a glass transition temperature less than about -20° C.

12. (Original) A biodegradable composition as defined in claim 1, wherein the soft biodegradable polymer has a glass transition temperature less than about -30° C.

Application No. 10/087,256
Amendment "C" dated October 20, 2005
Reply to Office Action mailed July 8, 2005

13. (Original) A biodegradable composition as defined in claim 1, further including at least one nonbiodegradable polymer.

14. (Original) A biodegradable composition as defined in claim 1, further including at least one of a particulate filler or a fibrous filler.

15. (Original) A biodegradable composition as defined in claim 14, wherein the particulate filler comprises an inorganic filler.

16. (Original) A biodegradable composition as defined in claim 15, wherein the inorganic filler is included in an amount greater than about 10% by weight of the biodegradable composition.

17. (Original) A biodegradable composition as defined in claim 15, wherein the inorganic filler is included in an amount greater than about 20% by weight of the biodegradable composition.

18. (Original) A biodegradable composition as defined in claim 15, wherein the inorganic filler is included in an amount greater than about 30% by weight of the biodegradable composition.

19. (Original) A biodegradable composition as defined in claim 14, wherein the particulate filler comprises an organic filler.

Application No. 10/087,256
Amendment "C" dated October 20, 2005
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20. (Currently Amended) A biodegradable composition comprising:

at least one soft thermoplastic biodegradable polymer having a glass transition temperature less than about $-10^{\circ}\text{C}.$;

at least one stiff synthetic thermoplastic biodegradable polymer having a glass transition temperature greater than about $10^{\circ}\text{C}.$,

wherein at least one of the soft thermoplastic biodegradable polymer or the stiff thermoplastic biodegradable polymer comprises thermoplastic starch that is substantially free of glycerin; and

at least one solid particulate filler included in an amount of at least about 30% 10% by weight of the biodegradable composition,

wherein the biodegradable composition is suitable for formation into at least one of sheets or films by means of extrusion, film-blowing, or casting.

21. (Original) A biodegradable composition as defined in claim 20, wherein the solid filler comprises at least one of an inorganic particulate filler or an organic particulate filler.

22. (Currently Amended) A biodegradable composition as defined in claim 21, wherein the inorganic particulate filler is included in an amount greater than about 35% 20% by weight of the biodegradable composition.

Application No. 10/087,256
Amendment "C" dated October 20, 2005
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23. (Currently Amended) A sheet or film formed from a biodegradable composition comprising:

at least one stiff thermoplastic biodegradable polymer having a glass transition temperature greater than about 10° C., the at least one stiff thermoplastic biodegradable polymer comprising thermoplastic starch having sufficiently high crystallinity so as to be a stiff thermoplastic polymer, the thermoplastic starch being substantially free of high boiling liquid plasticizers; and

at least one soft synthetic thermoplastic biodegradable polymer having a glass transition temperature less than about -10° C.,

~~the biodegradable composition optionally comprising thermoplastic starch, with the proviso that the thermoplastic starch is included in an amount of less than 10% by combined weight of the soft and stiff biodegradable polymers;~~

wherein the biodegradable composition is formed into the sheet or film by extrusion, film-blowing, or casting.

24. (Currently Amended) A sheet or film as defined in claim 23, wherein the ~~biodegradable composition includes thermoplastic starch that is substantially free of plasticizers~~ at least one soft synthetic thermoplastic biodegradable polymer comprises an aliphatic-aromatic copolyester.

Application No. 10/087,256
Amendment "C" dated October 20, 2005
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25. (Currently Amended) A sheet or film formed from a biodegradable composition comprising:

at least one stiff thermoplastic biodegradable polymer having a glass transition temperature greater than about 10° C., the at least one stiff thermoplastic biodegradable polymer optionally comprising thermoplastic starch that is substantially free of glycerin; and

at least one soft thermoplastic biodegradable polymer having a glass transition temperature less than about 0° C., the at least one soft thermoplastic biodegradable polymer comprising an aliphatic-aromatic copolyester,

~~the biodegradable composition optionally comprising thermoplastic starch, with the proviso that the thermoplastic starch is substantially free of plasticizers;~~

wherein the biodegradable composition is formed into the sheet or film by extrusion, film-blowing, or casting.

26. (Currently Amended) A biodegradable composition as defined in claim 1, wherein the at least one soft biodegradable polymer further includes at least one of polybutylene succinate, polybutylene succinate adipate, or polyethylene succinate, and wherein the or an aliphatic-aromatic copolyester including includes units formed from adipic acid, dialkyl terephthalate, and at least one aliphatic diol.

27. (Previously Presented) A sheet or film as defined in claim 25, the biodegradable composition comprising thermoplastic starch having sufficiently high crystallinity so as to be a stiff thermoplastic polymer.

28. (Currently Amended) A sheet or film as defined in claim 25, the at least one stiff thermoplastic biodegradable polymer consisting essentially of one or more synthetic biodegradable polymers, the biodegradable composition comprising thermoplastic starch having sufficiently low crystallinity so as to be a soft thermoplastic polymer.